REMARKS

Claims 16, 17 and 19-39 were pending in the present application. Claims 16, 17, 19-25, 29 and 33-36 were rejected. Claims 16, 17, 22 and 34 are herein amended. Claims 21 and 29 are herein cancelled without prejudice. No new matter has been added. Applicants thank the Examiner for the courtesies extended in the telephone interview of June 4, 2009. Applicants' Statement of the Substance of the Interview is incorporated herein.

Rejoinder

Although Applicants previously submitted that claim 16 shares a "special technical feature" as the other pending claims, the Office Action states the restriction is appropriate. The Office Action states that the special technical feature is "screening for an agonist or an antagonist to the LPA receptor." In response, Applicants respectfully submit that the special technical feature is more generally an application of the p2y9 receptor. As such, Applicants respectfully submit that claim 16 shares this special technical feature with the other claims. Rejoinder of claim 16 is respectfully requested.

Applicants' Response to Claim Objections

On the Office Action Summary Sheet, the Office Action indicates that claims 26-28, 30-32 and 37-39 are objected to. However, the Office Action itself does not contain any discussion of these claims. As such, Applicants' representative contacted the Examiner by telephone to clarify whether these claims are regarded as reciting allowable subject matter, but are objected to

as being dependent upon a rejected base claim. As indicated in the interview summary dated June 5, 2009, the Examiner confirmed that these claims recite allowable subject matter. However, Applicants respectfully decline to re-write these claims in independent form at this time.

Applicants' Response to Claim Rejections under 35 U.S.C. §112

Claims 17 and 19-21 were rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

The Office Action maintains the rejection with respect to the broader claims directed at the genus including variants of SEQ ID NO: 1. The Office Action states that the seven transmembrane regions do not confer a specific functional activity. The Office Action also states that there is no evidence that the Applicants were "in possession of" the claimed genus. Finally, the Office Action provides some comments with respect to p2y5 and the EDG family. Additionally, in the telephone interview of June 4, 2009, the Examiner commented that a claim reciting 95% homology is broader than the subject matter of the Declaration.

In response, Applicants herein amend the independent claims to recite "at least 98.1%" homology instead of "at least 95%" homology. Applicants respectfully submit that this amendment does not raise new issues requiring further search or consideration, since "at least 95%" homology includes "at least 98.1%" homology. Accordingly, Applicants respectfully submit that the previously-filed Declaration is commensurate in scope with the claims. As illustrated in the previously-submitted alignments, mouse p2y9 is 98.1% homologous to SEQ ID

NO: 1, with only seven of 370 amino acids being different. Furthermore, as illustrated in the previously-filed Declaration, Acc. No. AK045289 (mouse) will bind LPA. Acc. No. AK045289 is mouse p2y9, also known as GPR23. The data showed that the binding amount of radiolabeled LPA increased with the concentration increase against mouse GPR23-transiently-developed RH7777 cell membranes, and that the Bound/Free (B/F) ratio constantly decreases with the increase in labelled LPA. Thus, the binding activity was shown by an ordinary receptor-coupling experiment. Therefore, Applicants respectfully submit that it is clear that allele variants having at least 98.1% homology to human p2y9 will have similar LPA receptor activity. Additionally, Applicants respectfully submit that genes responsible for signal transduction are highly conserved among mammals. As such, the genes derived from a mouse are model genes of such signal transduction genes in mammals. Accordingly, the signal transduction that occurs in mouse p2y9 should be considered to be a model of the p2y9 in a representative number of mammals, including humans.

As to the comments in the Office Action regarding p2y5 and the EDG family, Applicants respectfully submit that these comments are off-point. As discussed on page 25 of the specification, p2y5 and p2y9 only have 56.2% homology. Thus, p2y5 is not really "closely related" to p2y9. Furthermore, since the claims recite 98.1% or more homology, any comments directed at a variant having only 56.2% homology to p2y9 are not relevant. As to the EDG family, Applicants respectfully submit that distant proteins *may or may not* have similar binding, but that close proteins *will* have similar binding. Again, since the claims recite 98.1% or more homology, any comments directed at a variant having no homology to p2y9 are not relevant.

In summary, Applicants respectfully submit that in view of (i) the structural recitation of at least 98.1% homology to SEQ ID NO: 1, (ii) the structural recitation of seven transmembrane regions, (iii) the functional requirement of LPA binding activity, (iv) the previously submitted sequence-alignment evidence, and (v) the previously submitted experimental evidence of LPA binding, all pending claims fully comply with the requirements of 35 U.S.C. §112. Favorable reconsideration is respectfully requested.

Claims 21, 25, 29 and 33 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action states that claims 21, 25, 29 and 33 are indefinite because "if a candidate compound that acts as an agonist of G protein-coupled receptor p2y9 functions as an inhibitor of carcinoma cell invasion, a candidate compound that acts as an antagonist of G protein-coupled receptor p2y9 would not function as an inhibitor of carcinoma cell invasion, and vice versa." In essence, the Office Action regards claims 21 and 29 as conflicting with claims 25 and 33.

In response, Applicants herein cancel claims 21 and 29. Based on at least page 44, lines 3-4 and original claim 7, it is clear that activation of p2y9 decreases activity that causes carcinoma cell invasion. Therefore, the subject matter of claims 25 and 33 is retained, and the subject matter of claims 21 and 29 is cancelled. Favorable reconsideration is respectfully requested.

Allowable Subject Matter

As noted above, the Examiner indicated that claims 26-28, 30-32 and 37-39 recite allowable subject matter. Since claim 29 is cancelled, claim 33 also recites allowable subject matter. However, as noted above, Applicants respectfully decline to re-write these claims in independent form at this time.

For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned attorney.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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